Claims

1. A loop filter for a continuous time sigma delta analog to digital converter which converts an analog input signal into a digital output signal,
said loop filter comprising an active analog filter which includes active devices for providing a power gain,
wherein the number of active devices is lower than the filter order of said active analog filter.

2. The loop filter according to claim 1,
wherein said active devices are operational amplifiers.

3. The loop filter according to claim 1,
wherein said active devices are transconductance amplifiers.

4. The loop filter according to claim 1,
wherein said active devices are voltage to current converters.

5. The loop filter according to claim 1, wherein said active analog filter is a cascaded analog filter comprising cascaded analog filter elements which are connected in series to each other.

6. The loop filter according to claim 5,
wherein said cascaded filter elements are cascaded biquad filter elements.

7. The loop filter according to claim 6,
wherein said cascaded analog filter elements are cascaded lattice filter elements.

8. The loop filter according to claim 6,
wherein at least one biquad filter element is a Sallen-and-Key filter element.

9. The loop filter according to claim 1,
wherein the loop filter comprises a first input terminal for applying the analog input signal.

10. The loop filter according to claim 1,
wherein the loop filter comprises an output terminal for supplying an output signal of said loop filter to a quantizer which quantizes the loop filter output signal to generate said digital output signal.

11. The loop filter according to claim 10,
wherein the digital output signal is fed back to a second input terminal of said loop filter.

12. The loop filter according to claim 11,
wherein said loop filter comprises at least one digital-analog-converter (DAC) which converts the digital output signal applied to said second input terminal of said loop filter into an analog signal.

13. The loop filter according to claim 12,
wherein the analog signal generated by said digital-analog-converter is added to the analog input signal applied to said first input terminal of said loop filter.

14. Continuous time sigma delta analog-digital-converter which converts an analog input signal to a digital output signal,
comprising:
a loop filter which comprises an active analog filter which includes active devices providing a power gain,
wherein the number of active devices is lower than the filter order of said active analog filter; and
a quantizer which quantizes a loop filter output signal of said active loop filter to generate said digital output signal.

15. Continuous time sigma delta analog-digital-converter according to claim 14,
wherein said loop filter comprises a first input terminal for applying said analog input signal.

16. Continuous time sigma delta analog-digital-converter according to claim 15,
wherein the digital output signal of said quantizer is fed back to a second input terminal of said loop filter.

17. Continuous time sigma delta analog-digital-converter according to claim 16,
wherein said loop filter comprises at least one digital-analog-converter which converts the digital output signal applied to said second input terminal of said loop filter into an analog signal.

18. Continuous time sigma delta analog-digital-converter according to claim 17,
wherein the analog signal generated by said digital-analog-converter is added to the analog input signal applied to said first input terminal of said loop filter.